User manual

HSM-500 rotary tool

with knee control

WASSERMANN DENTAL-MASCHINEN

CE

WASSERMANN DENTAL-MASCHINEN GMBH

Dear customer,

Thank you for choosing a product from the Wassermann range. Wassermann dental equipment incorporates the highest standards of quality and the latest technology. In order to enjoy maximum performance and years of trouble-free operation from the equipment, please read this user manual carefully before you start work, and operate the unit according to the recommended guidelines.
Please ensure that all persons operating the equipment have read and understood this user manual.

Keep this user manual on hand for ready reference.

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1 For your safety

1.1 Correct use of this product

This laboratory equipment is designed for working with dental materials (stainless steels, plastics, ceramics, etc.) in dental laboratories using rotating tools.

1.2 Safety symbols used in this manual

Warning!

This is a warning of risk situations and dangers.

Failure to observe this warning could be life-threatening. These warnings must be observed.

Information!

This symbol draws your attention to specific features, which must be observed.

1.3 Safety guidelines

Configuring and operating this equipment requires ***precise knowledge*** and ***observance*** of the instructions in this ***user manual***. The equipment is designed only for its intended application.

Servicing and repairs should be carried out only by authorised specialists.

Make sure that the unit is connected to the correct mains voltage.

Danger! Do not touch the tool when it is rotating or coming to a stop! Be sure to follow the manufacturer's guidelines for the maximum permissible speed of the rotating tools used.

Take the following precautions before starting work:

- **Wear eye protection**
- **Use a protective visor**

1.4 Handpiece block

This rotary tool features electronically controlled **overload protection**.
If an excessive load blocks the handpiece, the motor switches off automatically and the **red LED flashes**.
The handpiece stops if the chuck is open, and the electronics also cut out if the tool starts working accidentally.

1.5 Responsibility for operation and damage

The responsibility for operating the unit lies exclusively with the owner or user if the said unit is incorrectly serviced, maintained or altered by persons not employed by an accredited dealer or if the unit is used in a manner contrary to its specified purpose.
The unit must be maintained and operated in accordance with this user manual. Wassermann Dental-Maschinen GmbH is not responsible for damage arising from the ***non-observance*** of these instructions.

Guarantee and responsibility provisions contained in the sales and supply conditions of Wassermann Dental-Maschinen GmbH are not extended by these instructions.

Product responsibility lapses if the equipment is altered by unauthorized third parties or if non-original parts are installed. Use only original WASSERMANN replacement parts.

1.6 Authorized users

The owner of the equipment must ensure that any users have been provided with the user manual and that they have read and understood its contents before operating the equipment.

Ensure that this user manual is accessible <u>at all times</u> and has been read and understood.

2 Care and maintenance

2.1 Maintenance

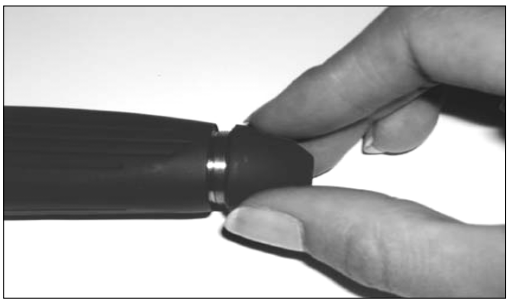
Always disconnect the power cable before undertaking cleaning or maintenance.
The model plate must always be legible and should not be removed.

The equipment should be cleaned at regular intervals to ensure trouble-free operation. It requires only normal cleaning (sponge, damp cloth, mild detergent). Do not use chemical additives.

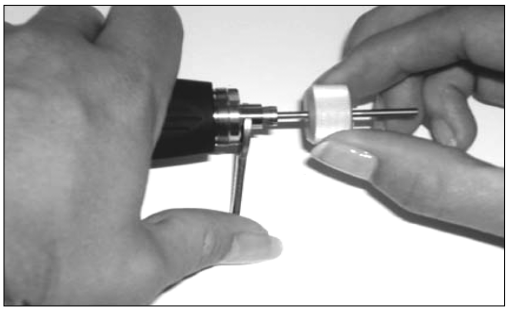
2.2 Care

Remove external dirt from time to time with some form of cold cleaner.
Use only cold cleaners to avoid damaging the paintwork or removing the lettering.
Recommended: A151 universal cleaner.

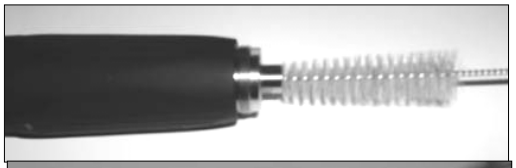
2.3 Cleaning and/or changing the chuck



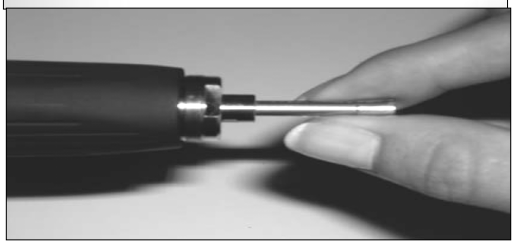
- Turn off the mains power.
- Open the chuck (see 5.4) and remove the tip by turning it manually to the left.



- Insert the chuck key fully in the chuck.
- Hold the shaft firmly with an adjustable wrench.
- Remove the chuck by turning the chuck key to the left.



- Use a brush to clean the shaft and then lubricate the chuck and the bore with two drops of oil each.



- Insert the chuck by hand.
- **Make sure** that the chuck mechanism is still open.

- Insert the chuck key in the chuck and hold the shaft firmly with a wrench.
- Tighten the chuck up to the stop.

3 Use / Application

The HSM – 500 is designed for working with dental materials such as stainless steels, plastics, ceramics, etc. in dental laboratories using rotating tools.

Warning!

This tool is **not designed as medical** equipment.
It is **not to be used** on human beings.
The tool is not to be used in areas where special conditions apply (corrosive or potentially explosive atmospheres).

4 Before you start

4.1 Unpacking / Transport

- Open the cartons, remove the packing materials, and carefully lift out the instrument and accessories. Check the accessories are correct.
- When transporting the unit, use appropriate packing materials to avoid accidental damage.

Locate the user manual and read it carefully.

When unpacking, it is important to identify any accidental transport damage. If necessary, draw up an immediate status report.

Warning! Before starting the tool, check on the right side of the controller to make sure it is set to the correct voltage (230 V or 115 V). If it is not, use a screwdriver to set it correctly.

4.2 Contents

111100	Handpiece	592013	Mains cable
111102	HSM-350 / 500 cable	111107	Mounting rail
111103	Handpiece holder	208210	DIN 7971 screws
111895	Knee control		
111150	Cleaning set		

5 Switch functions

5.1 POWER switch

The POWER switch turns the controller **ON/OFF**.
When the unit is on, the mains switch lights **green**.

5.2 CONTROL rocker switch

This switch enables you to control the tool by hand or knee.

5.3 DIRECTION rocker switch

The DIRECTION rocker switch controls the direction of rotation of the handpiece.

5.4 Speed-control knob

This knob is used to set the desired rpm. When you operate the foot control or switch to manual operation, the handpiece comes up to the set speed. The unit has two safety reminders: at 30,000 and 40,000 rpm you will detect increased rotational resistance.

5.5 Changing rotating tools

Rotating tools can only be changed when the motorised handpiece has stopped completely.
Dangerous!

- Turn the handpiece casing to the right to open the chuck.
- Remove the rotating tool.
- Push in the new tool until you feel the stop.
- Turn the handpiece casing to the left – you will feel and hear it clicking into place.

Warning! Always turn the handpiece casing up to the stop.

6 Installation

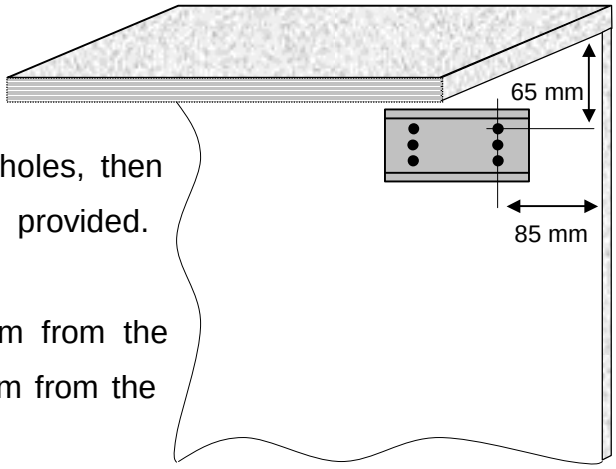
6.1 Installing the motor and mains cables

At the rear of the controller:

- Insert the motor cable (5-pole) into its socket and turn it to the right.
- Insert the mains cable into the socket on the tool.
- Turn the tool on at the mains.

The tool is now ready for operation.

6.2 Attaching the mounting rails



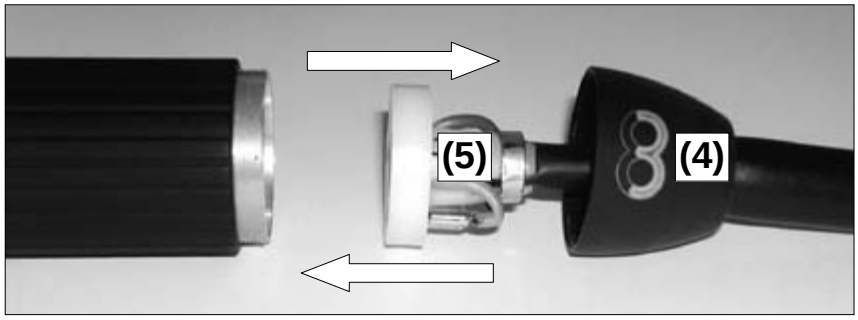
Use the hole template supplied or the mounting rails. The tool must be mounted on the right-hand side. Pre-drill 3 mm Ø holes, then screw in the rails firmly using the screws provided. Allow for the following dimensions:

The first hole must be drilled min. 65 mm from the underside of the bench top and min. 85 mm from the forward edge of the bench.

6.3 Removing and assembling the motorised handpiece

a) Removal

- Turn the POWER switch to **OFF**.
- Undo the motor cable swivel nut from the handpiece casing.
- Pull the cable plug out of the handpiece.



b) Assembly

- Take the cable plug and insert it into the handpiece in the correct orientation.
- Tighten the motor cable swivel nut by turning it clockwise by hand.

  Warning! Do not use pliers!

7 Start-up

- Check that the rotating tool has been inserted up to the stop.
- Set the **CONTROL** switch to foot control.
- Turn the **speed-control knob** to a low rpm setting**.**
- Set the **POWER** switch to **ON**; it will light **green**.
- Push the foot switch; the handpiece will run at the selected speed.
- There are two inbuilt safety features for your protection: a notch at 30,000 rpm and a stop at 40,000 rpm.

8 Troubleshooting / Correcting errors

8.1 Faults

Faults	Likely cause	Likely solution
Red LED flashes	Faulty cable	Replace cable
	Overload block	Work with less pressure
	Open chuck on handpiece	Close chuck
	Thermal overload switch triggered	Turn unit off and allow to cool
Red LED stays on	System error	Send unit in for service

If the above recommendations do not solve the problem, contact your dental depot or our Service department.

8.2 Technical data

Voltage switchable	220 – 240 V / 50 – 60 Hz 110 – 130 V / 50 – 60 Hz
Max. power consumption -unit	230 W
Motor power output	160 W
Max. torque	7.5 Ncm
Fuse	T 2.5 A
Motor speed	1500 – 50,000 rpm
Duty cycle	**S6 4min / 10 min**
Height	84 mm
Width	215 mm
Depth	277 mm
Weight	4.85 kg

Noise emission ≤ 70db(A).

We reserve the right to make technical changes.

8.3 Spare parts

Spare parts	
Item number	Description
111100	HSM-350 / 500 motorised handpiece
111102	Handpiece cable
111103	Handpiece holder
111151	Cleaning oil
111152	Brush
111154	Adjustable wrench
111155	Chuck key for 2.35 mm Ø chuck
111156	Chuck key for 3 mm Ø chuck
511155	Foot control
111105	2.35 mm Ø chuck
111106	3 mm Ø chuck

8.4 Repairs

Servicing or repairs to the unit must only be carried out by trained technicians.
Only original spares are to be used.
Responsibility for the product is voided if altered by unauthorized persons or if inappropriate components are installed.

9 Warranty

The warranty period for our equipment is 12 months. If faults occur within the warranty period, contact your dental depot or get in touch directly with our Service department. Your rotary tool should only be operated in perfect condition. If faults occur which could harm operators or third parties, the unit should not be used until it has been fixed.
This warranty does not cover damage caused by improper use, external mechanical causes, transport damage or interference with the unit by unauthorized persons.

10 EC conformity certificate

in accordance with 73/23/EWG (low-voltage guidelines) modified by 93/68/EWG and 89/336/EWG (EMV guidelines) and 89/392/EWG (Machinery guidelines), with modifications

Manufacturer:	W A S S E R M A N N Dental-Maschinen GmbH Rudorffweg 15 - 17 D-21031 Hamburg	Product description:	Laboratory rotary tool for dental applications
Model:	HSM-500 laboratory rotary tool with knee control		111995
Applicable standards:	EN 61010-1:1993 + A2:1995 EN 60335/2/54 03.97 EN 50081-1 + EN 50082-1		

Hiermit wird bestätigt, dass die oben bezeichnete Maschine den genannten EG-Richtlinien entspricht. Diese Erklärung wird ungültig, falls die Maschine ohne unsere Zustimmung verändert wird.

This is to confirm that the above mentioned machine complies with the described EC rules. This declaration becomes invalid if the machine is modified without our approval.

Cette machine est conforme aux normes en vigueur de la Communité Européene. Cet avis est nul et non avenant si cette machine est modifiée sans notre accord.

Esta máquina, anteriormente mencionada, cumple con los limites requeridos por el reglamento EC. Ahora bien, esta declaración quedará invalidada en caso de realizar modificaciones al aparato sin nuestra aprobación.

Hiermee wordt bevestigd dat bovengenoemde machine voldoet aan de voorgeschreven EU normen. Deze verklaring verliest geldigheid als er zonder onze uitdrukkelijke toestemming wijzigen aan de machine worden aangebracht.

Place, date: Hamburg, 10 April 2003

Company stamp:

WASSERMANN DENTAL-MASCHINEN GMBH
Rudorffweg 15 - 17 · 21031 Hamburg

Signed: _____

Wilfried Wassermann
(Managing Director)

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